

Name _____

Lab: Tragedy of the Commons

Background:

There are natural resources that all humanity must share. When the resource is free to all, it can be overused and then run out. The fishing industry is an example of the harvesting of one such resource, and this activity will demonstrate the fate of natural resources if they are not used sustainably.

PROCEDURE:

1. Each “ocean” has 4 “fishermen” (i.e. students).
2. “Fish” (i.e. Goldfish) are the resource that can be harvested from the “ocean” (paper plate). Each fish is worth \$10. The more fish you catch, the more money you will earn. You catch fish by using a “fishing pole” (plastic drinking straws) and a “net” (a small drinking cup).
3. “Fishing season” lasts 30 seconds. During the 30 seconds, each fisher catches fish. You must catch at least one fish to survive and stay in the game. If you catch less than one, then you’re dead and out of the game.
4. The “fish” reproduce once a year. At the end of each fishing season, add one new fish to the ocean for each fish that remains in the ocean. The total number of fish cannot exceed 16.
5. A bonus will be given at the end of the simulation to the one fisher in each ocean who has the most fish.

DATA

Names of Fishers	year 1	year 2	year 3	year 4	year 5	year 6	Total for each fisherman
Total fish harvest from ocean							XXXXXXXXXXXXXXXX
Total income from ocean							XXXXXXXXXXXXXXXX

DISCUSSION

1. Did the same fisherman harvest the most fish during each fishing season? Explain.
2. Did your group of students discuss actions and strategies before each fishing season? If so, what were the main ideas?
3. Explain the best strategy for harvesting a common resource.

4. Let's say that last year a new family moved into the area. What happens to the fish harvest and income when there's another fishing family?

5. Your fish harvest is worth money; it's your livelihood. Is it better to have the money or the fish? Explain.

6. If you were working for the U.S. Department of Fish and Game, would you be more interested in the data of the "Totals for each fisherman" or the data from "Total fish harvest from the ocean"? Why?

SUMMARY QUESTIONS:

7. What is the carrying capacity of the ocean?

8. What do "commons" mean?

9. Simulations and models are used in science to make predictions. Was this an accurate simulation for the fishing industry? Why or why not?

10. How does the local government make sure there are fish for everyone?